

DOCUMENT RESUME

ED 338 351

PS 019 883

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TITLE Preschool Children's Memory for Repeated Changes in the Lunch Routine.
PUB DATE Apr 91
NOTE 10p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (Seattle, WA, April 18-20, 1991).
AVAILABLE FROM Elisa Krackow, 107 Brent Drive, Wallingford, PA 19086.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Change; *Memory; *Preschool Children; Preschool Education; Recall (Psychology); Recognition (Psychology)
IDENTIFIERS *General Event Representation; *Routine Events

ABSTRACT

An experiment examined the possibilities that: (1) repeated deviations in a routine event become fused into the general event representation (GER) for that event; and (2) when deviations go unreported, it is because they have been forgotten. Preschool children were interviewed to get their script reports before and after repeated deviations in the lunch routine. During the second interview, they were asked questions about the changes. Although children's original scripts were not altered, they developed a new script that included the changes in the lunch routine. Children responded correctly to the positive change questions significantly more often than they were able to report change when asked for scripts. These results suggest that GERs are not easily altered, and when repeated deviations are not reported by preschoolers, it is not due to forgetting. Appended are five references and a table of quantitative data. (Author/GLR)

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Preschool children's memory for repeated changes in the lunch
routine

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Abstract

This experiment examined whether repeated deviations in a routine event become fused into the general event representation (GER) for that event, and if deviations went unreported, whether it was because they were forgotten. Preschool children were interviewed to get their script reports before and after repeated deviations in the lunch routine. During the second interview, they were also asked yes/no questions about the changes. Although children's original scripts were not altered, they developed a new script which included the changes in the lunch routine. Children responded correctly to the positive change questions significantly better than they were able to report change when asked for scripts. These results suggest that GERs are not easily altered, and when repeated deviations are not reported by preschoolers, it is not due to forgetting.

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Paper presented at the biennial meeting of the Society for Research in Child Development, Seattle, Washington, April, 1991. Requests for reprints should be sent to Elisa Krackow, 107 Brent Drive, Wallingford, PA 19086.

I would especially like to thank Dorothy Flannagan for her assistance in all phases of this project; Silvija Singh for her helpful comments on this paper; Robyn Fivush, Judith A. Hudson, and Janet Kuebli for their insightful discussion on young children noticing changes, at the Conference on Human Development last March; Pamela Blewitt for being my sponsor; and Roberta Golinkoff for her encouragement to carry out this project.

ED338351

PS C19883

Introduction

General event representations (GERs), defined most simply as knowledge of what usually happens in an event, are formed through repeated experiences of the same event (Fivush, 1984). So for example, after several experiences of going to the doctor, children can tell you that the doctor looks down your throat and checks your ears. However, as general event representations become more elaborate, details of events are fused into the GER which prevents routine episodes from being recalled. This has been shown to happen even in preschoolers by Hudson (1990) & Hudson & Nelson (1986). However, one study found that when deviations were inserted into the snack routine only once, preschool children retained memories for the deviations. Therefore, the special snack was coded in memory because it differed from the GER of the usual routine. Furthermore, the type of deviation influenced which aspects of the event were recalled. For example, when props were used as part of the deviation in a Mickey Mouse theme snack, the children used the props to distinguish this snack from the others (Hudson & Krackow, 1990). Therefore, when events differ from the GER, the chance the event will be recalled increases significantly.

Kuebli (1990) examined preschool and early school-aged children's recall for event components that varied across repeated experiences of the same event and found that older children were better able to report change than younger children. Obviously, being tagged in memory is dependent upon noticing change. Thus, it is not clear whether the preschoolers in Kuebli's study were unaware of the

changes to begin with, did not retain the changes, or had difficulty in reporting them.

This study was designed to look at the effects of repeated deviations on children's memory of a routine event. Specifically it examined 1) whether repeated deviations in a routine event become part of the GER for that event or whether repeated deviations remain tagged in memory as deviations, and 2) if deviations went unreported in scripts, whether it was because preschoolers did not notice change, recall change, or because the ability needed to report change is undeveloped.

Method

Twelve children, mean age 4,6, from a suburban day care center were interviewed to get their script reports for "lunch at camp." Approximately one month later, deviations were inserted into the lunch routine. Each child experienced 4-6 "special" lunches. One day following their last lunch in which the deviations were performed, they were interviewed a second time to get their script reports for "lunch at camp." However, this time they were also asked about the deviations in both general and specific questions.

Interview 1

Children were interviewed individually and asked the general question, "What happens when you have lunch at camp?" This was followed by prompts, "What else? Anything else?" They were

subsequently asked the temporal question, "What is the first thing that happens? What next?" They were probed until it was obvious that they could not tell the experimenter any more.

Deviations

Children were taken as a group outside in the yard of their day care center for lunch for 4-6 days. The experimenter brought a puppet to lunch and the deviations centered around the puppet. Seven major deviations were inserted.

1. The children had to line up and tell the puppet their names.
2. They were taken outside in the yard of their day care center for lunch.
3. The puppet handed out the lunches.
4. The puppet played a game with them.
5. They had to give the puppet their trash.
6. They had their picture taken with the puppet.
7. They got to pet the puppet.

Interview 2

Children were asked the same questions as in interview 1. Afterwards, children were also asked additional questions about the lunches they had with the puppet. "What happens when the puppet, Sammy, comes to lunch? What else? Anything else?" They were then asked the temporal question, "What is the first thing that happens when Sammy comes to lunch? What next?" Then they were asked 10 yes/no questions about the deviations. The 5 questions to which "yes" was the correct answer included deviations that had actually occurred. For example, "Did you get your picture taken with the

puppet?" The 5 questions to which "no" was the correct response were changes in the lunch routine that did not occur. For example, "Did the puppet read you a book?"

Coding

The coding system was a combination of systems used by Fivush (1984) and Hudson & Nelson (1986). All statements were coded into the following categories:

Act- One action or activity. We ate lunch. We pet him. He played a game with us.

Conditional Act- Specifies a qualification that must be met for an act to occur. Also, specifies a time frame or activity in which an act must occur.

At lunch, Sammy plays a game. If it rains, we have lunch in room 1.

Optional Act- An act that only occurs sometimes or an act that can be replaced within the same slot. Sometimes we go to kindergym. I could eat my sandwich or my cookies.

Elaboration- Repetition of a previously mentioned statement with new information or changes.

We had juice at lunch. It was orange juice.

We had crackers. No, it was cookies.

Description- What things looked like and affective statements such as liking, not liking, cute, fun.

Sammy was brown.

That was my favorite part.

Results

The most interesting result is that children never reported the changes in the lunch routine when asked for their usual "lunch at camp" script in the second interview. In contrast, when asked both general and specific questions about the lunches with the puppet, they reported statements specific to these lunches.

Composition of scripts Although each child was interviewed only two times, the data were analyzed as if there were three interviews. Interview 2 was broken down into two parts, with the general puppet questions and the temporal puppet questions serving as interview 3. A repeated measures ANOVA showed there were no significant differences between the total number of statements in the children's first "lunch at camp" script, second "lunch at camp" script, and the "puppet" script. Nor were there any differences found in the compositions of their scripts across interviews (based on the coding system).

Commonality of acts This is defined as acts mentioned by at least 33% of the children. In interview 1, children spoke about getting their lunches, eating, cleaning up, and going to the restroom. In the "puppet" interview, children recalled playing the game, the puppet giving out the lunches, telling the puppet their names, petting the puppet, and getting their picture taken with the puppet.

Recall Children were able to recall 97% of the yes/no questions correctly. More specifically, children were able to recall the changes significantly better, $t(11)=7.00$ $p<.001$, when asked in question form (in the "yes" questions) as compared to their spontaneous mentioning of the deviations in the "puppet" script.

Discussion

These results suggest that when changes are repeated within a routine event that children's representations for the original event remain unchanged. However, children develop a novel representation which includes the changes. This shows that children do distinguish between the two events. Within a short amount of time, children's new scripts reached the same level as their original scripts in both the total number of statements and in their composition. All 3 scripts were composed primarily of acts, a single activity or action. Children agreed to a certain extent on what happens in both of the lunch routines as designated by the commonality of acts. Of particular importance is that the acts mentioned in the "puppet" script are different from those stated in the original "lunch at camp" script. Furthermore, when preschoolers failed to spontaneously mention a change, it was not due to unawareness or forgetting. Children retained close to 100% of the changes, but these memories needed to be accessed through recognition memory. This suggests that younger children notice and retain changes, yet experience difficulty in reporting change. In conclusion, we see that representations of routine events are set in memory and are difficult to change.

Table 1: Mean number of total statements reported
and mean number of statement types
reported

	Interview 1	Interview 2	Interview 3 (Puppet)
Total	7.17	6.17	6.33
Acts	4.50	3.25	4.33
Conditional Acts	1.16	1.33	1.17
Elaborations	0.92	1.00	0.42
Descriptions	0.50	0.33	0.42
Optional Acts	0.08	0.25	0.00

Table 2: Number of statements* children report in
the "puppet" script compared to the number
of changes recognized in the "yes"
responses to the yes/no questions

Condition	Mean	Standard Deviation	t
Report	2.42	1.24	7.00*
Recognize	4.75	0.45	

*out of 5

*p<.001

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